THOMPSON CREEK

PLANNING STUDY

(Quimby Road to Westgrove Lane)

consisting of

ENGINEER'S REPORT

JUNE 1988

TC
425
T46.K5
1988

Santa Clara Valley Water District

TC 425 T46 K5 1988

SANTA CLARA VALLEY WATER DISTRICT

THOMPSON CREEK PLANNING STUDY
(Quimby Road to Westgrove Lane)

Consisting of

ENGINEER'S REPORT

Prepared by
Predesign Division

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JUNE 1988

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Introduction

This report presents the results of an investigation and makes recommendations to solve the flood problems on Thompson Creek between Quimby Road and Westgrove Lane. Figure 1 shows the project location.

Background

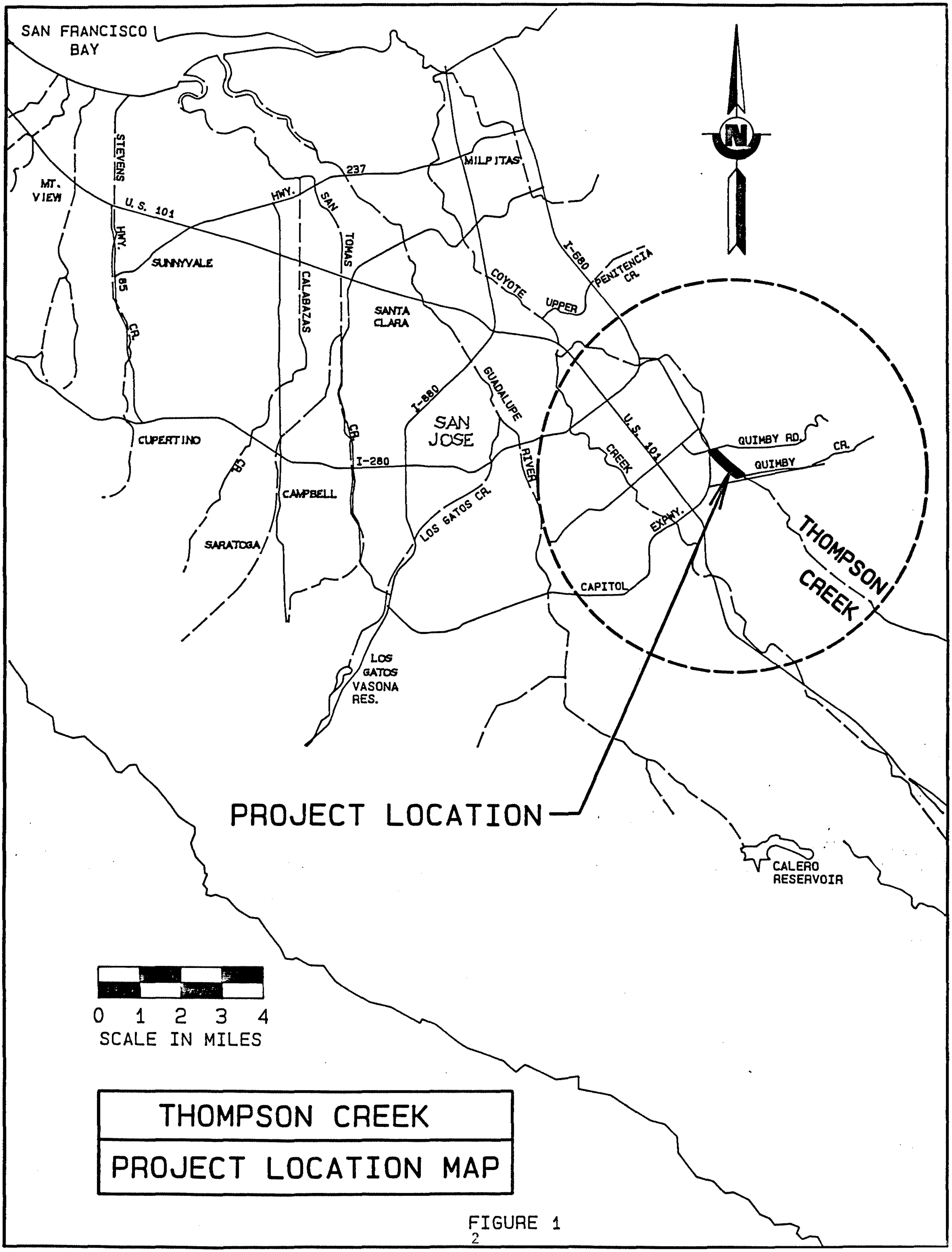
Thompson Creek between Quimby Road and Westgrove Lane was improved in 1980 to contain the one percent flood (Appendix A) with two to three feet of freeboard. The improvements consisted of a drop structure at Quimby Road, 1,000 feet of excavated earth channel with levees and rock lining on the side slopes and modified floodplain for the remainder of the study area.

After the project had been constructed by the District, the Federal Emergency Management Agency (FEMA) adopted an interim levee policy and in 1988 published a Final Rule [1/] establishing criteria for levee construction. Generally, FEMA requires a minimum of three feet of freeboard for leveed channels. When the City of San Jose requested that the Thompson Creek flood area, which affects about 100 residential structures, be removed from the Flood Insurance Rate Maps (FIRMs), FEMA denied the request. The design freeboard in the subject reach did not meet the minimum specifications in FEMA's levee policy.

Project Description

The proposed flood control project would provide protection from the one percent flood flow of 3,600 cfs with the freeboard specified in FEMA's Final Rule. The proposed project would raise the levees at three sites along Thompson Creek between Quimby Road and Westgrove Lane. The sites are shown on Figure 2 and the proposed work is described in following paragraphs.

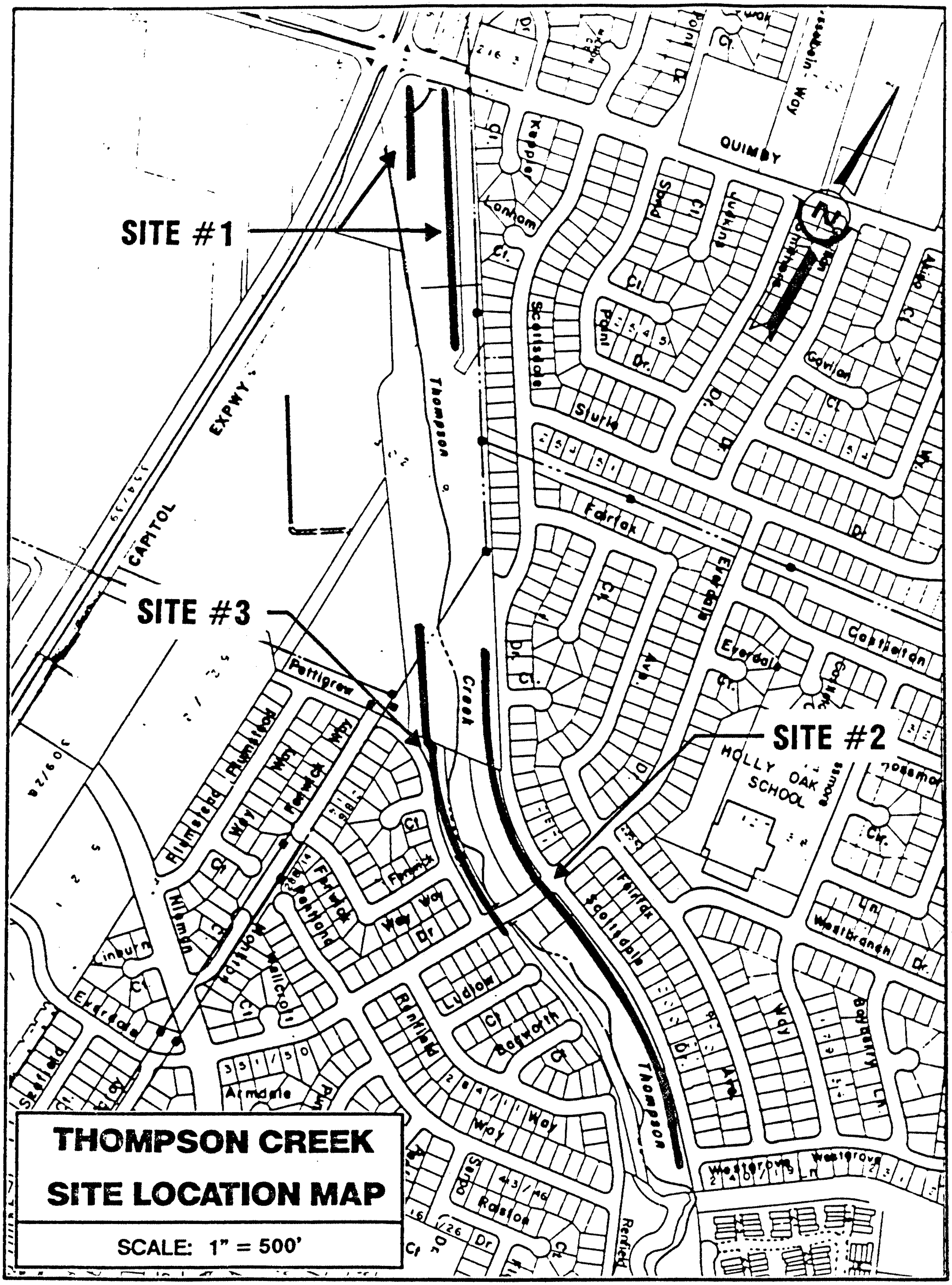
[1/] Federal Register/Volume 51, No. 164/ Monday, August 25, 1988, Page 30290



THOMPSON CREEK

PROJECT LOCATION MAP

FIGURE 1



THOMPSON CREEK
SITE LOCATION MAP

SCALE: 1" = 500'

FIGURE 2

Site No. 1

From Quimby Road to about 1,000 feet upstream, the existing channel is excavated earth with rock lining on the side slopes and levees on both banks. Both levees would be raised up to three feet with two to one side slopes. The east levee would be constructed on the existing levee filling to the outboard side and the west levee would be constructed on the existing levee filling to the inboard side. Maintenance roads of the same width and access as existing would be provided. Typical sections are shown on plan sheets five and six and a detail of the Quimby Road area is shown on sheet eight.

The one percent velocities through this reach would be from six to nine feet per second (fps).

Site No. 2

Beginning about 2,200 feet upstream of Quimby Road for about 2,000 feet upstream, the existing channel is a modified floodplain. The east levee in this reach would be raised up to one and one-half feet with varying side slopes. The levee would be constructed on the existing levee filling to the inboard side. The maintenance road width and top of levee width would be the same as existing. Typical sections are shown on plan sheets three and four. A concrete-lined drainage ditch would be constructed along the outboard toe of the levee from Westgrove Lane to Everdale Drive. A drainage inlet would be installed and connected to an existing curb drainage inlet near Everdale Drive.

One percent velocities through this reach would be from two to seven fps on the floodplain along the levees and eight to ten fps in the main channel.

Site No. 3

From about Pettigrew Drive to Everdale Drive, the existing channel is modified floodplain. About 1,300 feet of the west levee would be raised up to one and one-half feet. The construction would begin at the existing top of levee and the side slopes would conform to the existing side slopes on a 150-foot section upstream. The remaining downstream section of levee would be constructed on the existing levee filling to the inboard side. The outboard side slope would conform to the existing slope and the inboard side slope would be two to one. The maintenance road and top of levee width would be the same as existing. A 15-foot ramp would be constructed to provide access from Pettigrew Drive. Typical sections are shown on plan sheet seven. One percent velocities would be the same as for Site No. 2.

All 15-foot-wide maintenance roads and ramps in the project area would be armored with six inches of aggregate.

The estimated total project cost is about $130,000. The proposed measures will be financed through two existing sources of revenue; the East Flood Control Zone's allocation of the 1% property tax and the East Flood Control Zone Benefit Assessments.

Construction will be completed in one season and could begin as early as the Fall of 1988.

Public Involvement

Citizens residing in or owning property in the FEMA one percent flood area or adjacent to the project area were invited to view proposed project plans on April 20 at Holly Oak Elementary School. A general consensus of approval was received from those attending, however, two concerns were noted. First, the existing levee along Scottsdale Drive from Everdale Drive to Westgrove Lane is eroding and depositing sediment along the edge of the street. This is partly due to the lack of a street curb and the drainage pattern of the street. The proposed plan has been modified to include a drainage ditch and inlet in the District's right of way to remedy this problem. Second, pedestrian access to the floodplain area was inhibited by the installation of a three-foot fence from Everdale Drive to Westgrove Lane. Since the primary purpose of the fence is to control vehicular access and there are other pedestrian access points, two pedestrian openings are included in this project. However, these may be installed by the District Maintenance Division before project construction.

Maintenance Program Guidelines

A maintenance program will ensure the safe and efficient operation of the proposed flood control measures. The objective of the program is to establish evaluation criteria for periodic maintenance activities. These maintenance activities include sediment, debris, vegetation and trash removal, weed control and elimination of other potentially hazardous conditions. Other activities that would be performed as required include; rodent control, erosion repair, fence repair and installation, replacement of regulatory signs and other general activities.

The recommended maintenance program guidelines are explained below by channel type and are shown in Table 1. The reaches are defined according to different channel characteristics.

Quimby Road Drop Structure

This includes the concrete-lined drop structure, stream gage weir and culvert from Quimby Road upstream. The drop structure and weir are critical features which control the depth upstream. All blockage from debris or vegetation in the culvert will be removed to allow the drop structure to operate properly. Uniform sediment accumulation upstream of the drop structure will be removed when it reaches one foot deep and localized sediment build-up will be removed when it reaches two feet deep.

Excavated Earth Channel

From the drop structure upstream to the floodplain area, the channel is excavated earth with rock side slope protection. Flexible vegetation, such as cattails, will be removed when they occupy over 50% of any channel cross section area. Rigid vegetation (woody growth) will be removed from the channel bottom when they occupy over 10% of any channel cross section area. Accumulated sediment will also be removed during the removal of vegetation. Uniform sediment accumulation will be removed when it reaches two feet deep. Any localized sediment build-up will be removed when it reaches four feet deep.

TABLE 1

THOMPSON CREEK - QUIMBY ROAD TO WESTGROVE LANE
MAINTENANCE GUIDELINES FOR SEDIMENT AND VEGETATION REMOVAL

CHANNEL TYPE	MAINTENANCE ISSUE	ACCEPTABLE MAINTENANCE LIMIT	PERFORMANCE CRITERIA
DROP STRUCT AND CULVERT	Uniform Sediments	Depth of 1'	Remove sediment
	Local Sediments (Bars, Sloughs, etc)	Depth of 2'	Remove sediment
	Debris and Blockage		Remove Blockage
EXCAVATED EARTH CHANNEL	Uniform Sediments	Depth of 2'	Remove sediment
	Local Sediments	Depth of 4'	Remove sediment
	Local Sediment with Vegetation	Sediment of 2'	Remove sediment and vegetation
	Rigid Vegetation (Woody growth)	Occupying over 10% of the channel section	Remove vegetation from channel
	Flexible Vegetation (Cattails, etc)	Occupying 50% of the cross section	Remove vegetation from channel
FLOODPLAIN	Uniform Sediments	Sediment of 2'	Remove sediment
	Local Sediments	Sediment of 4'	Remove sediment
	Local Sediment with Vegetation	Sediment of 2'	Remove sediment and vegetation
	Rigid Vegetation (Woody growth)	Occupying over 10% of the channel section	Remove vegetation
	Flexible Vegetation (Weeds, Grass, etc)	Occupying 50% of the cross section	Remove vegetation
NATURAL CHANNEL	Uniform Sediments	Depth of 2'	Remove sediment
	Local Sediments	Depth of 4'	Remove sediment
	Local Sediment with Vegetation	Sediment of 4'	Remove sediment and vegetation
	Rigid Vegetation (Woody growth)	Occupying over 20% of the channel section	Remove vegetation
	Flexible Vegetation (Cattail, Vine, etc)	Occupying 50% of the cross section	Remove or trim vegetation

Modified Floodplain Channel

The remainder of the channel upstream is a modified floodplain. The natural channel in this reach will require minor periodic maintenance. Obstructions or rigid vegetation occupying over 20% of the channel cross section area will be removed and when vines, bushes or weeds occupy more than 50% of the channel cross section area they will be removed or trimmed. Rigid vegetation on the floodplain will be removed when they occupy over 10% of the cross section area. Weeds and grasses will not be allowed to occupy over 50% of the cross section area. Uniform sediment will be removed from the natural channel when it is two feet deep and from the floodplain when it is two feet deep. Local sediment will be removed when it is four feet deep.

Recommendation

The proposed project will provide the minimum freeboard to meet FEMA's requirements for levees. The project is estimated to cost $130,000.

It is recommended that the measures described in the report be approved and construction plans prepared for implementation of the project.

Robert Smith, RCE No. 17781
Flood Control Manager

APPENDIX A

The One Percent Flood

The one percent flood is that flow of water from a drainage area that has a one percent chance (probability of 0.01) of occurring in any given year. It is equivalent to the so-called 100-year flood, but it should not be thought of as an event that occurs regularly every 100th year. Instead, it is the flood flow event that would be equaled or exceeded about 100 times in 10,000 years. It is also possible that two repetitions of this flood flow could occur in a single year, or that a single event may not occur even once in 200 years.

The "one percent flood" is the preferred description of the design flood. However, the term "100-year flood" is equivalent. Unfortunately, this latter term often leads to the misconception that the design flood occurs only every 100th year.

Another terminology problem is the relation of the one percent storm and the one percent flood. The storm magnitude relates to flood conditions, drainage basin shape, length, slope orientation, and others. Therefore a one percent storm will not necessarily produce a one percent flood. The one percent flood should not be confused with nor should it be referred to as the one percent storm flood.

The one percent flood has a small risk of occurrence in a given year, but this risk is accumulative. when compared with the 30-year life of the average home loan, for example, the chance that it will occur is quite large. During the 30-year loan period, the chance that a one percent flood will occur, or be exceeded, approaches 30 percent.

The magnitude of the one percent flood must be calculated using statistical hydrological (stochastic) methods. Since it is the desire of the District to provide equal protection from flooding to all residents, a uniform method of determining design flood flows is required; one tht is regional in scope and one that minimizes the chance of providing unequal protection from one area to another. This objective is reached through a regional peak flood frequency analysis that uses the best available hydrologic data from stream systems in and adjacent to the District. The regional process utilized by the District was developed after considerable effort and has been reviewed and approved by the academic and professional community.

The research on the statistical measurement of flood flows and frequencies has shown that the larger magnitude floods that occur at relatively infrequent intervals, such as the one percent flood, are products of extremely heavy rainfalls, either exceptionally high intensity or of long duration. With exceptionally high-intensity rainfall, so much rain falls in a short period of time that no matter what the ground cover is - soil, pavement, grass, trees, or buildings - the water cannot be stored or soaked up, and it runs off in a flood. With long-duration rainfall, a lot of rain falls, but it comes over a long period of time. Bare soil, grassland, forests, landscaping, house roofs, and pavement become fully saturated, and flooding occurs when no more water can be absorbed, stored, or evaporated. Thus, for large floods, the type of development or degree of urbanization that exists in the total watershed has essentially no effect on the magnitude of the peak flood flow that is generated.

However, the situation is different for the small magnitude floods which occur at frequent intervals. In these, the rainfall intensity is less or of shorter duration. The absorption, holding, or storage characteristics of the land are much more important. With much less water present, soil, grass, and forests tend to soak up and hold back the rain that falls, while pavement and house roofs let a large percentage run off.

Therefore, when grassland is converted to pavement, the amount of water that runs off is much greater for the small amounts of rainfall. The magnitude of the small, more frequent type of lood flow is increased by urbanization.

In discussing flood flows and urbanization, there is one additional factor that should be mentioned. This is over-bank storage in floodplain areas. Where urbanization occurs in the floodplain and the stream is channelized, the storage of over-bank floodwaters is reduced. This results in greater downstream flood flows. This increase in flood flows occurs for any magnitude or frequency of flooding that would have resulted in channel overflow and storage of waters in the floodplain.

Lloyd C. Fowler
October 31, 1974

APPENDIX B

6/13/88

THOMPSON CREEK
QUIMBY ROAD TO WESTGROVE LANE

-COST ESTIMATE SUMMARY-

ITEM	UNIT COST	UNIT	QUANTITY	AMOUNT
CLEARING & GRUBBING	$5,000	ACRE	2	$10,000
LEVEE/CHANNEL MODIFICATIONS				
-Fill for Levee	$7	C.Y.	3,590	$25,130
MISCELLANEOUS				
-Aggregate (Maint Rds/Ramps)	$30		1,530	$45,900
-Sidewalk Removal (Everdale Dr)	$1		440	$440
-Sidewalk Repl (Everdale Dr)	$6		500	$3,000
-Concrete Lining (V-Ditch)	$300		20	$6,000
-Raise Drainage Inlet	$500		1	$500
-Raise 36 inch CMP MH	$300		1	$300
-Install Drainage Inlet	$1,000		1	$1,000
-Remove/Replace Drainage Inlet	$1,500		1	$1,500
-SUBTOTAL-				$93,770
MOBILIZATION (8%)				$7,502
CONSTRUCTION CONTINGENCIES (10%)				$9,377
-CONSTRUCTION COST-				$110,649
ENGINEERING DESIGN, ADMIN. & INSPECTION (10%)				$19,917
-TOTAL PROJECT COST-				$130,565

MAP AND GENERAL PLAN

FOR

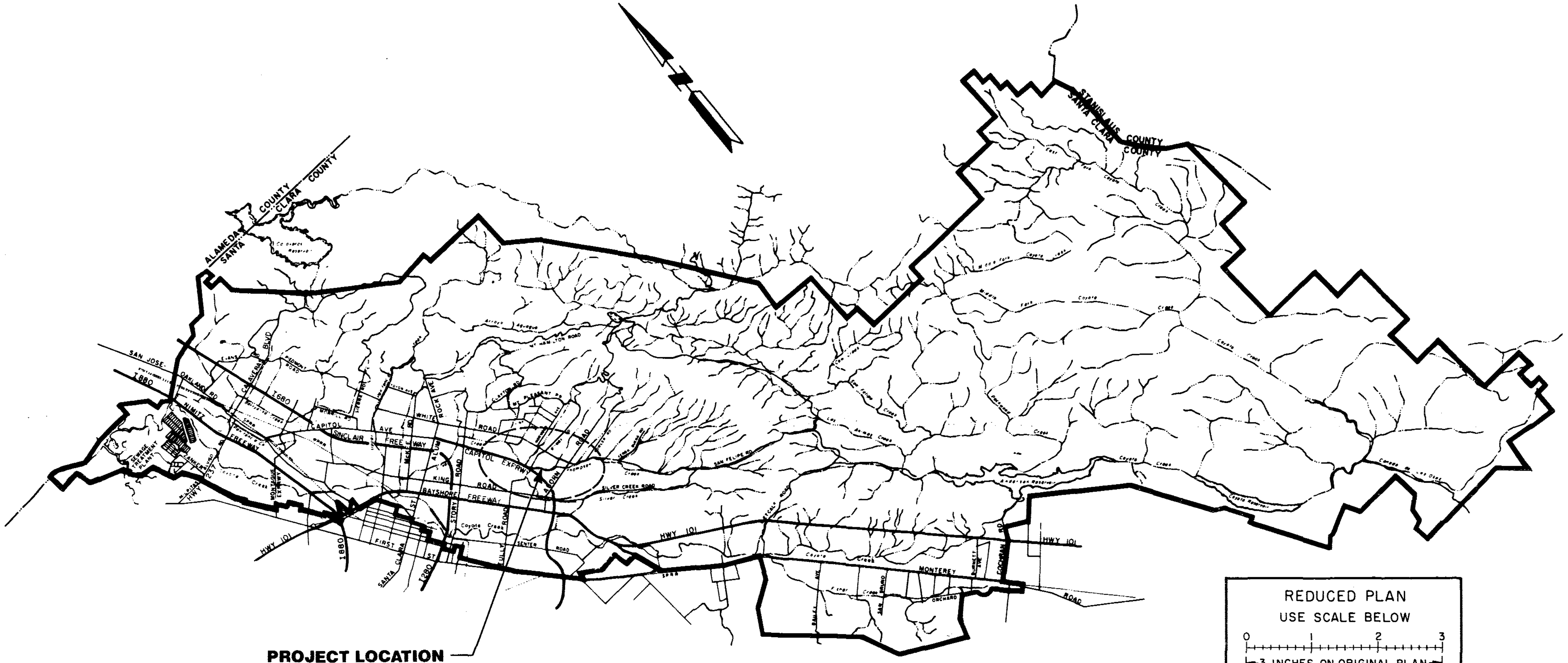
THOMPSON CREEK

FROM

QUIMBY ROAD TO WESTGROVE LANE

Santa Clara Valley Water District

EAST FLOOD CONTROL ZONE **PROJECT NO. 4047**



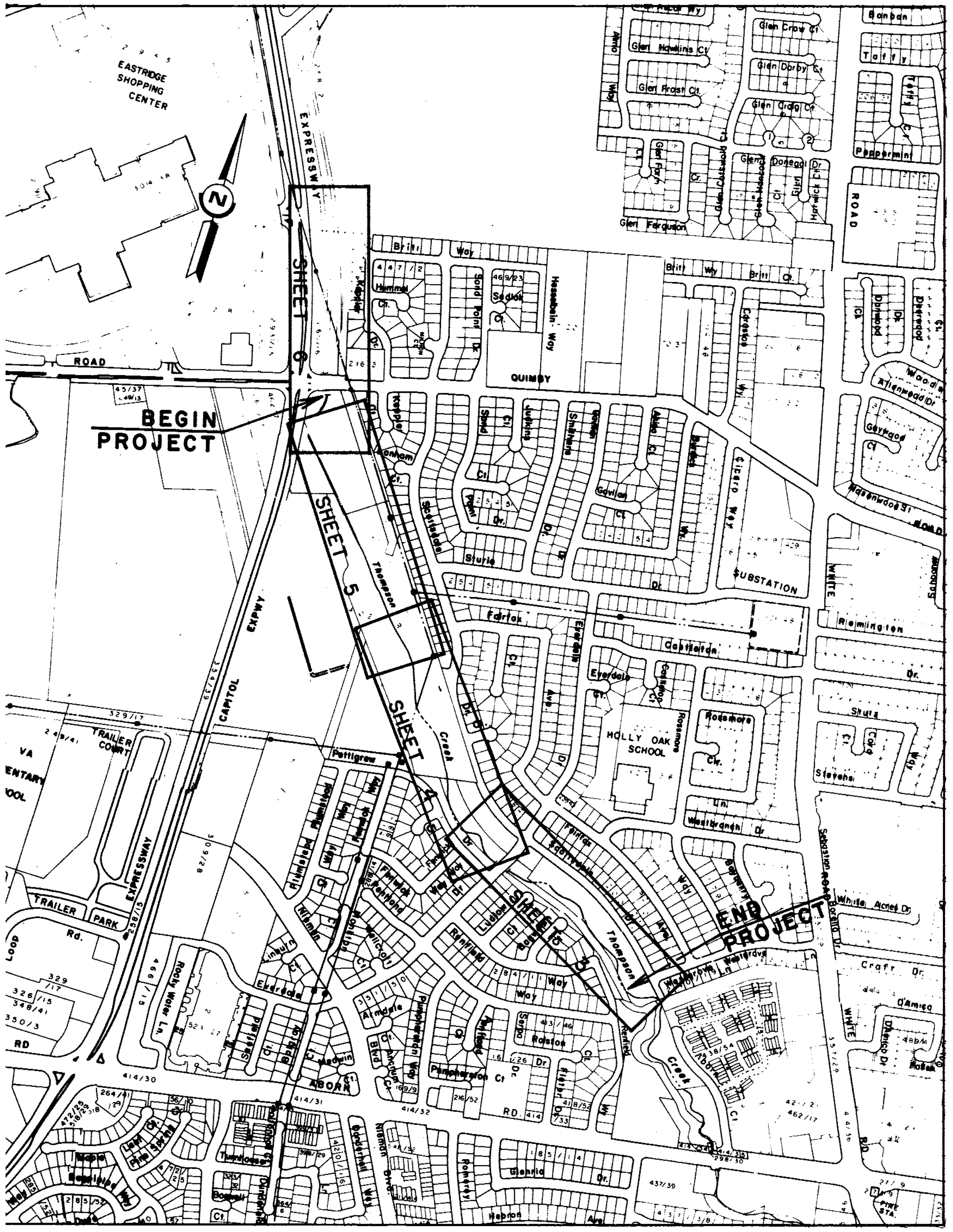
PROJECT LOCATION

INDEX

SHEET NO.	DESCRIPTION
1	MAP & TITLE PAGE
2	INDEX MAP
3-7	PLAN & PROFILE
8	DETAIL

REDUCED PLAN
USE SCALE BELOW
0 1 2 3
⟵3 INCHES ON ORIGINAL PLAN⟶

PROJECT APPROVAL
R. R. Smith
FLOOD CONTROL MANAGER
DATE 6-21-88

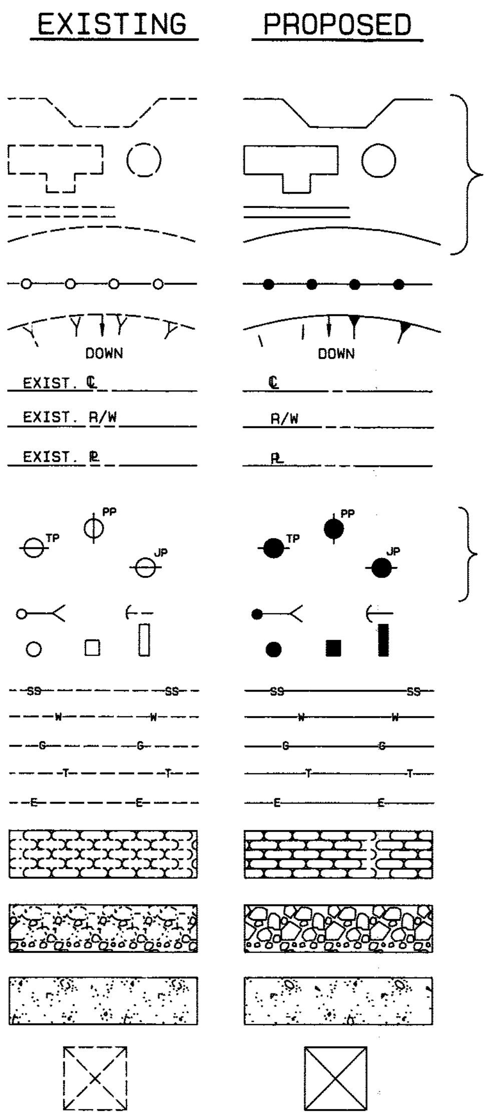


ABBREVIATIONS

AC	Asphalt Concrete
BC	Begin Curve
BM	Bench Mark
CFS	Cubic Feet Per Second
CMP	Corrugated Metal Pipe
DI	Drop Inlet
DR	Drive
D/S	Downstream
EC	End Curve
EL	Elevation
EXIST	Existing
FT (')	Feet (Foot)
GB	Grade Break
INV	Invert
JP	Joint Pole
LN	Lane
MAINT	Maintenance
MAX	Maximum
MH	Manhole
MIN	Minimum
NGVD	National Geodetic Vertical Datum
N	North
N/A	Not Applicable Not Available
NE	Northeast
NE'LY	Northeasterly
NW	Northwest
NW'LY	Northwesterly
N'LY	Northerly
PCC	Point Of Compound Curve
PG&E	Pacific Gas And Electric
PI	Point Of Intersection
POB	Point Of Begining
POT	Point Of Tangent
PP	Power Pole
PRC	Point Of Reverse Curve
PT	Point
PT&T	Pacific Telephone And Telegraph
Q	Design Discharge (Cubic Feet Per Second)
R	Radius
RCB	Reinforced Concrete Box
RCP	Reinforced Concrete Pipe
RD	Road
RT	Right
R/W	Right Of Way
REF	Reference (Refer)
S	South Slope
SCSP	Sacked Concrete Slope Protection
SCVWD	Santa Clara Valley Water District
SD	Storm Drain
SE	Southeast
SEC (")	Seconds
SECT	Section
SE'LY	Southeasterly
SHT	Sheet
SJWC	San Jose Water Company
SPECS	Specifications
SQ FT	Square Feet
SS	Sanitary Sewer
STA	Station
SW'LY	Southwesterly
SW	Southwest
S'LY	Southerly
T	Tangent Telephone
TAN BRNG	Tangent Bearing
TBM	Temporary Bench Mark
TC, TCL, TCR	Survey Control Lines
TOB	Top Of Bank
TOC	Toe Of Channel Top Of Curb
TP	Telephone Pole Turning Point
TYP	Typical
U/S	Upstream
VERT	Vertical
W	West
X-Sect	Cross Section

REDUCED PLAN
USE SCALE BELOW
0 1 2 3
3 INCHES ON ORIGINAL PLAN

LEGEND



Facilities

Chain Link Fence

Slope Of Bank (Dirt Only)

Center Line Or Control Line

Right Of Way Line

Property Line

Power Pole (PP)
Joint Pole (JP)
Telephone Pole (JP)
As Designated

Guy Anchor
Utilities Boxes
(As Abbreviated)

Sanitary Sewer

Water Line

Gas Line

Telephone Line

Electric Line

Sacked Concrete Lining

Rock Lining

Concrete

Tower

◎	Bench Mark
+	Panel Point (Aerial)
▽	Water Surface (Profile)
∠	Angle
℄	And
℘	Property Line
#	Number

DESCRIPTION	DATE	APPR	REFERENCE INFORMATION AND NOTES

DATE 5/88
DESIGN KLEMENCIC
DRAWN F S W
CHECKED

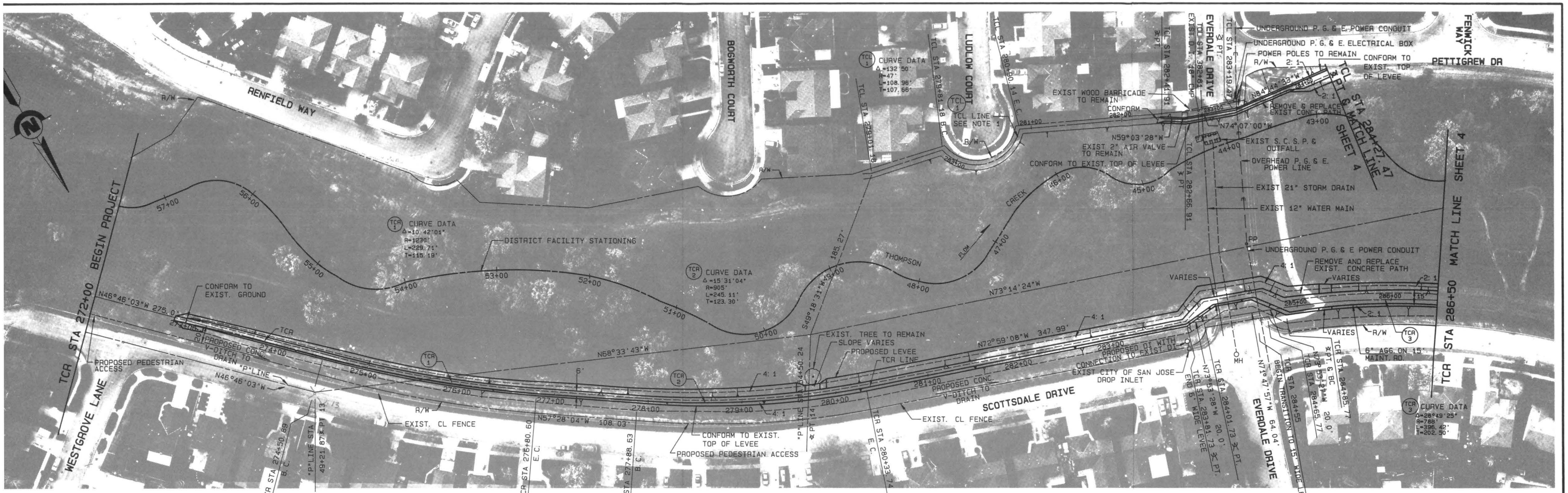
Santa Clara Valley Water District

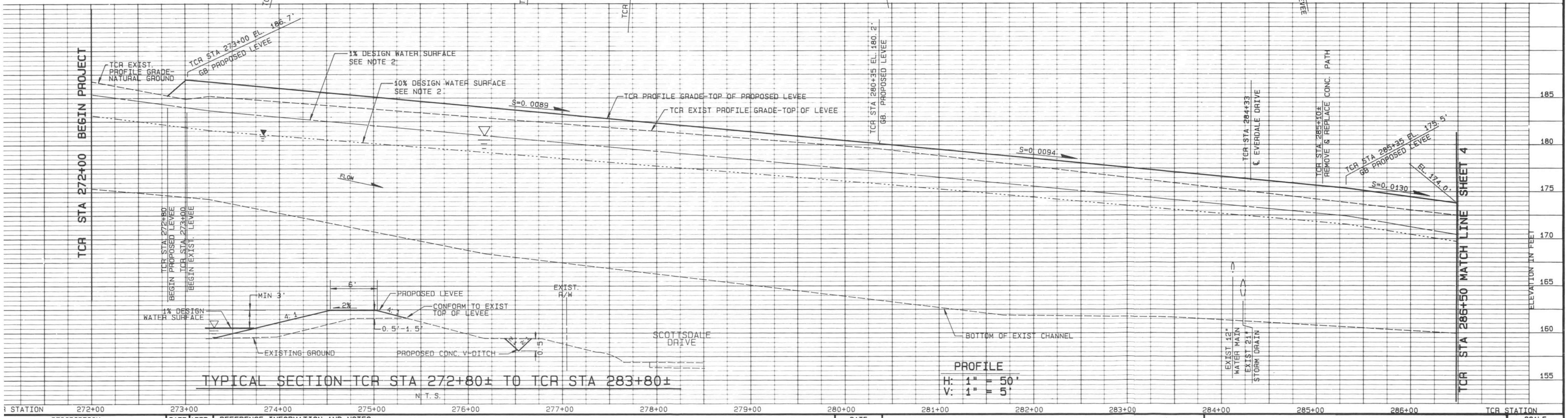
ENGINEERING CERTIFICATION
PROJECT ENGINEER R.C.E. NO. 40842
Randy Talley
DIVISION ENGINEER R.C.E. NO. 25093

ENGINEERING APPROVAL
HEAD, PROJECT DEVELOPMENT BRANCH R.C.E. NO. 20474

THOMPSON CREEK
ABBREVIATIONS & LEGEND

SCALE NONE
SHEET 2


RENFIELD WAY
BOGWORTH COURT
LUDLOW COURT
EVERDALE DRIVE
PETTIGREW DR
FENWICK WAY
WESTGROVE LANE
SCOTTSDALE DRIVE
TCR STA 272+00 BEGIN PROJECT
TCR STA 286+50 MATCH LINE SHEET 4
TCL STA 284+27.47 PT & MATCH LINE SHEET 4
THOMPSON CREEK
FLOW
DISTRICT FACILITY STATIONING
CURVE DATA Δ=10°42'01" R=1230' L=229.71' T=115.19'
CURVE DATA Δ=15°31'04" R=905' L=245.11' T=123.30'
CURVE DATA Δ=28°49'25" R=788' L=396.42' T=202.50'
CURVE DATA Δ=132°50' R=47' L=108.96' T=107.66'
CONFORM TO EXIST. GROUND
PROPOSED PEDESTRIAN ACCESS
PROPOSED CONC. V-DITCH TO DRAIN
"P" LINE
N46°46'03"W 275.0'
N68°33'43"W
N57°28'04"W 108.03'
N72°59'08"W 347.99'
N73°14'24"W
N59°03'28"W
N74°07'00"W
N84°44'33"W
EXIST. CL FENCE
EXIST. TREE TO REMAIN
SLOPE VARIES
PROPOSED LEVEE
TCR LINE
CONFORM TO EXIST. TOP OF LEVEE
CONNECTION TO EXIST. DI
PROPOSED DI WITH CONNECTION TO EXIST. DI
EXIST CITY OF SAN JOSE DROP INLET
EXIST WOOD BARRICADE TO REMAIN
EXIST 2" AIR VALVE TO REMAIN
EXIST S. C. S. P. & OUTFALL
OVERHEAD P. G. & E. POWER LINE
EXIST 21" STORM DRAIN
EXIST 12" WATER MAIN
UNDERGROUND P. G. & E POWER CONDUIT
UNDERGROUND P. G. & E. ELECTRICAL BOX
POWER POLES TO REMAIN
CONFORM TO EXIST. TOP OF LEVEE
REMOVE & REPLACE EXIST CONC PATH
REMOVE AND REPLACE EXIST. CONCRETE PATH
VARIES
6" AGG. ON 15' MAINT. RD.
BEGIN TRANSITION TO 15' WIDE LEVEE
END 6' WIDE LEVEE
TCR STA 274+50.89 B.C.
"P" LINE STA 49+21.87 & PT 13
TCR STA 276+80.60 E.C.
TCR STA 277+88.63 B.C.
TCR STA 280+33.74 E.C.
TCR STA 283+81.73 & PT
TCR STA 284+01.73 & PT
TCR STA 284+55
TCR STA 284+65.77
TCR STA 284+85.77
R/W
4:1
2:1
MH
PP


TCR STA 272+00 BEGIN PROJECT
TCR STA 286+50 MATCH LINE SHEET 4
TCR EXIST. PROFILE GRADE-NATURAL GROUND
TCR STA 273+00 EL. 186.7' GB PROPOSED LEVEE
1% DESIGN WATER SURFACE SEE NOTE 2
10% DESIGN WATER SURFACE SEE NOTE 2
TCR PROFILE GRADE-TOP OF PROPOSED LEVEE
TCR EXIST PROFILE GRADE-TOP OF LEVEE
S=0.0089
S=0.0094
S=0.0130
TCR STA 280+35 EL. 180.2' GB. PROPOSED LEVEE
TCR STA 284+33 ℄ EVERDALE DRIVE
TCR STA 285+10± REMOVE & REPLACE CONC. PATH
TCR STA 285+35 EL. 175.5' GB PROPOSED LEVEE
EL. 174.0'
TCR STA 272+80 BEGIN PROPOSED LEVEE
TCR STA 273+00 BEGIN EXIST. LEVEE
FLOW
BOTTOM OF EXIST CHANNEL
EXIST 12" WATER MAIN
EXIST 21" STORM DRAIN
ELEVATION IN FEET
185
180
175
170
165
160
155
TCR STATION
272+00
273+00
274+00
275+00
276+00
277+00
278+00
279+00
280+00
281+00
282+00
283+00
284+00
285+00
286+00
MIN 3'
1% DESIGN WATER SURFACE
6'
2%
4:1
PROPOSED LEVEE
CONFORM TO EXIST TOP OF LEVEE
0.5'-1.5'
EXIST. R/W
EXISTING GROUND
PROPOSED CONC. V-DITCH
0.5'
SCOTTSDALE DRIVE

TYPICAL SECTION-TCR STA 272+80± TO TCR STA 283+80±

N. T. S.

PROFILE
H: 1" = 50'
V: 1" = 5'

DESCRIPTION	DATE	APPR.
REDUCED PLAN USE SCALE BELOW 0 1 2 3 3 INCHES ON ORIGINAL PLAN		

REFERENCE INFORMATION AND NOTES:

1. FOR PROFILE OF TCL LINE SEE SHEET 7.
2. 1% FLOW RATE IS 3,600 CFS, 10% FLOW RATE IS 2,100 CFS, CHANNEL ROUGHNESS 0.050 AND FLOODPLAIN ROUGHNESS = 0.040.
3. PLACE 6" OF AGGREGATE ON PROPOSED AND EXIST. 15' MAINT. ROADS AND RAMPS.
4. CROSS SECTION LOOKS DOWNSTREAM.

PHOTOGRAPHY BY: AIR FLIGHT SERVICE DATE: 12/87 RECTIFICATION BY:

DATE
3-88
DESIGN
M. K.
DRAWN
CAM
CHECKED

Santa Clara Valley Water District

ENGINEERING CERTIFICATION
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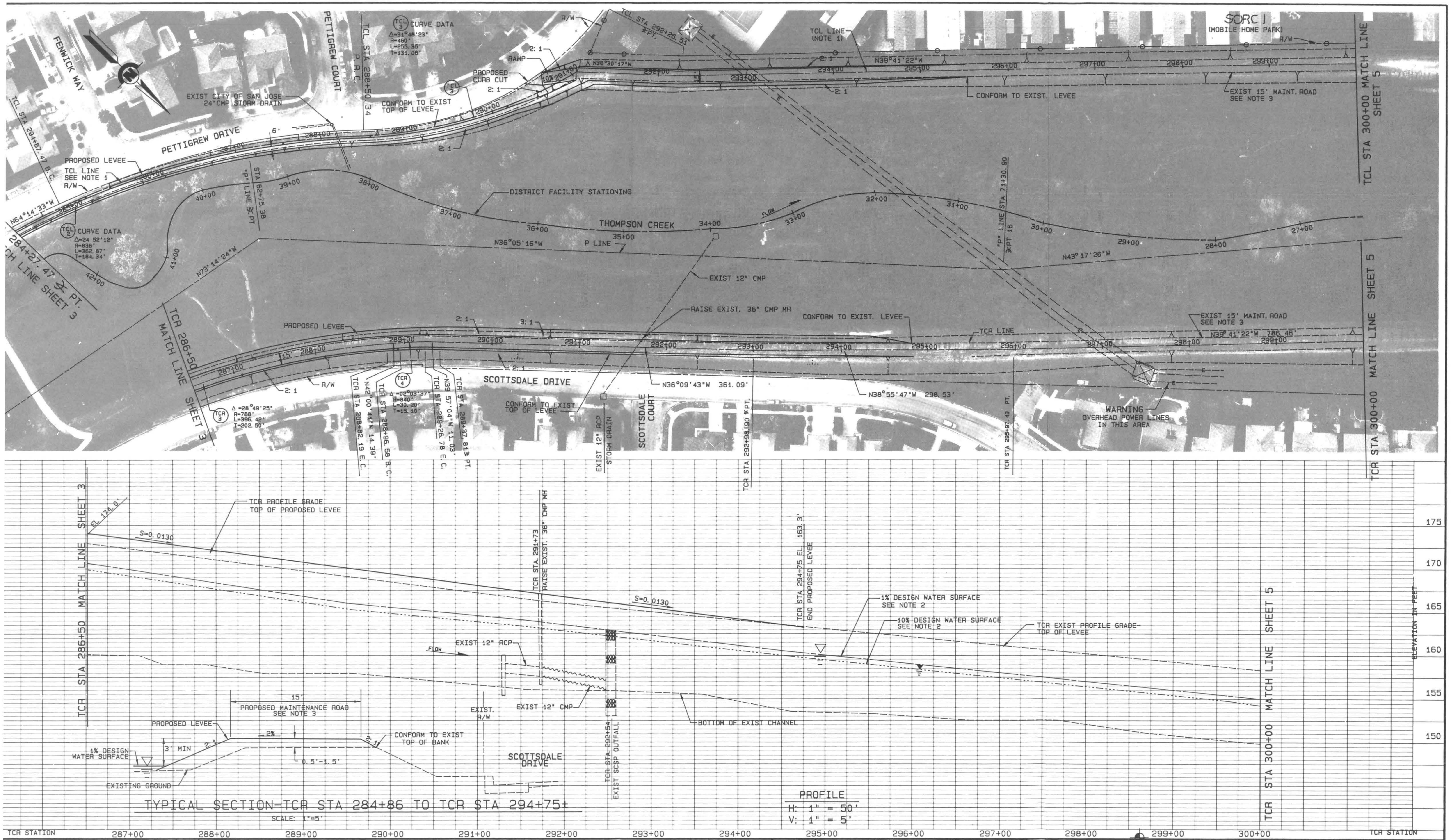
HEAD, PROJECT DEVELOPMENT BRANCH R.C.E. NO. 20474

THOMPSON CREEK

PLAN & PROFILE-TCR LINE

SCALE
1" = 50'

SHEET
3


FENWICK WAY
PETTIGREW COURT
PETTIGREW DRIVE
SCOTTSDALE DRIVE
SCOTTSDALE COURT
SORCI (MOBILE HOME PARK)
THOMPSON CREEK
TCL CURVE DATA Δ=31°48'23" R=460' L=255.35' T=131.06'
TCL STA 288+50.34 P.R.C.
TCL STA 292+26.51 P.T.
TCL STA 284+87.47 B.C.
EXIST CITY OF SAN JOSE 24"CMP STORM DRAIN
CONFORM TO EXIST TOP OF LEVEE
PROPOSED CURB CUT
RAMP
PROPOSED LEVEE
TCL LINE SEE NOTE 1
R/W
TCL LINE (NOTE 1)
CONFORM TO EXIST. LEVEE
EXIST 15' MAINT. ROAD SEE NOTE 3
N36°30'17"W
N39°41'22"W
N64°14'33"W
TCL 2 CURVE DATA Δ=24°52'12" R=836' L=362.87' T=184.34'
284+27.47 P.T. MATCH LINE SHEET 3
"P" LINE STA 62+75.38 P.T.
DISTRICT FACILITY STATIONING
FLOW
P LINE
N36°05'16"W
N73°14'24"W
N43°17'26"W
"P" LINE STA 71+30.90 P.T. 16
EXIST 12" CMP
RAISE EXIST. 36" CMP MH
TCR LINE
N39°41'22"W 786.46'
TCR 286+50 MATCH LINE SHEET 3
TCR 3 Δ=28°49'25" R=788' L=396.42' T=202.50'
TCR 4 Δ=02°03'37" R=840' L=30.20' T=15.10'
TCR STA 288+82.19 E.C.
N42°00'41"W 14.39'
TCR STA 288+96.58 B.C.
TCR STA 289+26.78 E.C.
N39°57'04"W 11.03'
TCR STA 289+37.81 P.T.
N36°09'43"W 361.09'
N38°55'47"W 298.53'
EXIST 12" RCP STORM DRAIN
TCR STA 292+98.90 P.T.
TCR STA 295+97.43 P.T.
WARNING OVERHEAD POWER LINES IN THIS AREA
TCL STA 300+00 MATCH LINE SHEET 5
TCR STA 300+00 MATCH LINE SHEET 5
TCR STA 286+50 MATCH LINE SHEET 3
EL 174.0'
S=0.0130
TCR PROFILE GRADE TOP OF PROPOSED LEVEE
TCR STA. 291+73 RAISE EXIST. 36" CMP MH
EXIST 12" RCP
EXIST 12" CMP
TCR STA 292+54 EXIST SCSP OUTFALL
TCR STA 294+75 EL 163.3' END PROPOSED LEVEE
1% DESIGN WATER SURFACE SEE NOTE 2
10% DESIGN WATER SURFACE SEE NOTE 2
TCR EXIST PROFILE GRADE-TOP OF LEVEE
BOTTOM OF EXIST CHANNEL
ELEVATION IN FEET
175
170
165
160
155
150
15'
PROPOSED MAINTENANCE ROAD SEE NOTE 3
PROPOSED LEVEE
3' MIN
2:1
2%
1% DESIGN WATER SURFACE
0.5'-1.5'
CONFORM TO EXIST TOP OF BANK
EXIST. R/W
SCOTTSDALE DRIVE
EXISTING GROUND
TYPICAL SECTION-TCR STA 284+86 TO TCR STA 294+75±
SCALE: 1"=5'
PROFILE
H: 1" = 50'
V: 1" = 5'
TCR STATION
287+00
288+00
289+00
290+00
291+00
292+00
293+00
294+00
295+00
296+00
297+00
298+00
299+00
300+00

DESCRIPTION	DATE	APPR.
REDUCED PLAN USE SCALE BELOW 0 1 2 3 3 INCHES ON ORIGINAL PLAN		

REFERENCE INFORMATION AND NOTES:

1. SEE SHEET 7 FOR PROFILE OF TCL LINE.
2. 1% FLOW RATE IS 3600 CFS; 10% FLOW RATE IS 2,100 CFS: CHANNEL ROUGHNESS= 0.060; FLOODPLAIN ROUGHNESS= 0.040.
3. PLACE 6" OF AGGREGATE ON PROPOSED AND EXIST. 15' MAINT. ROADS AND RAMPS.
4. CROSS SECTION LOOKS DOWNSTREAM.

PHOTOGRAPHY BY: AIR FLIGHT SERVICE

DATE: 12/87

RECTIFICATION BY:

DATE
2/88

DESIGN
M. K.

DRAWN
CAM

CHECKED

Santa Clara Valley Water District

ENGINEERING CERTIFICATION
PROJECT ENGINEER R.C.E. NO. 40842
Randy Talley
DIVISION ENGINEER R.C.E. NO. 25093

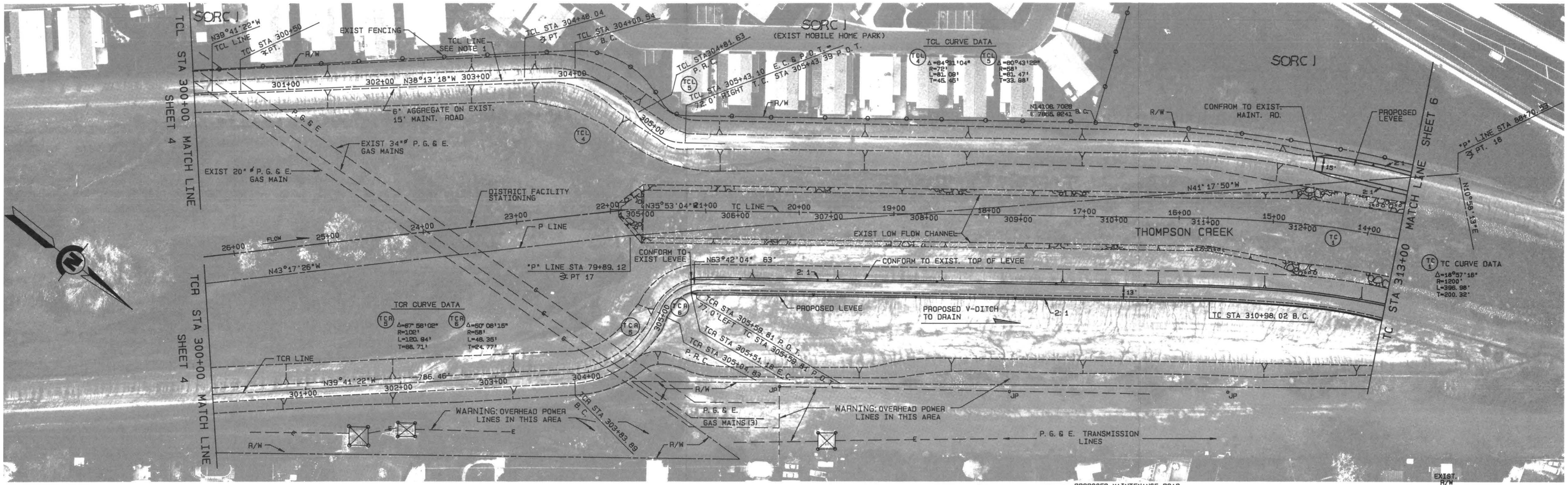
ENGINEERING APPROVAL
HEAD, PROJECT DEVELOPMENT BRANCH R.C.E. NO. 20474

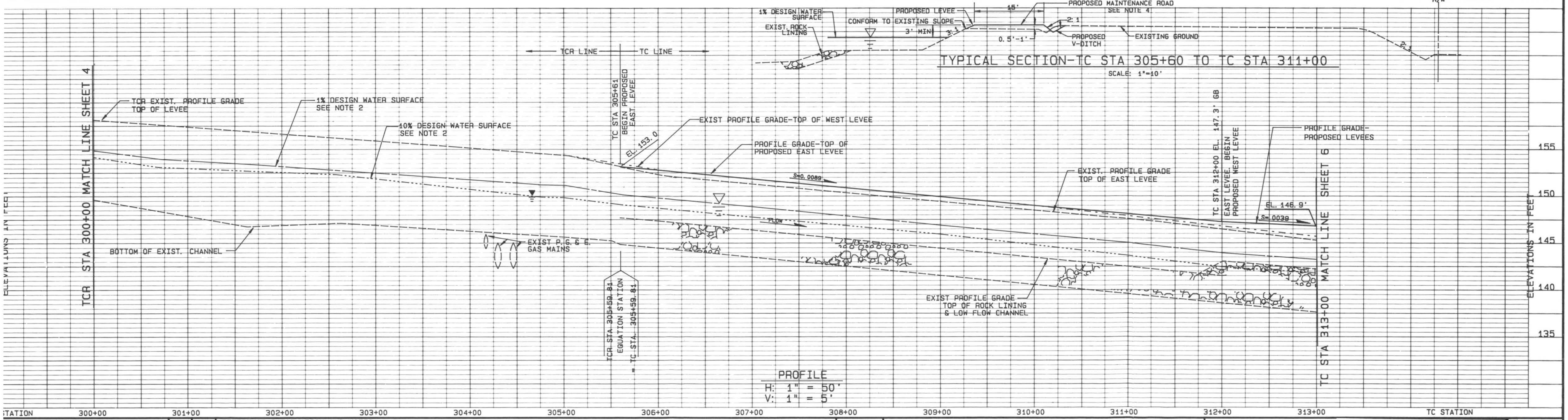
THOMPSON CREEK

PLAN & PROFILE-TCR LINE

SCALE
1' = 50"

SHEET
4


SORC J
(EXIST MOBILE HOME PARK)
TCL STA 300+00 MATCH LINE SHEET 4
N39°41'22"W
TCL LINE
TCL STA 300+50 ⊀ PT.
EXIST FENCING
TCL LINE SEE NOTE 1
TCL STA 304+48.04 ⊀ PT.
TCL STA 304+00.54 B.C.
TCL STA 304+81.63 P.R.C.
TCL STA 305+43.10 E.C. & P.O.T. = TCL STA 305+43.39 P.O.T. 72.0' RIGHT T.C.
TCL CURVE DATA
TCL 4 Δ=84°31'04" R=72' L=81.08' T=45.45'
TCL 5 Δ=80°43'22" R=58' L=81.47' T=33.88'
N14106.7028 E 7665.8241 B.C.
R/W
CONFROM TO EXIST. MAINT. RD.
PROPOSED LEVEE
15'
2:1
SHEET 6 MATCH LINE
"P" LINE STA 88+70.39 ⊀ PT. 18
N10°58'13"E
301+00 302+00 N38°13'18"W 303+00 304+00 305+00
6" AGGREGATE ON EXIST. 15' MAINT. ROAD
P.G. & E.
EXIST 34" P.G. & E. GAS MAINS
EXIST 20" P.G. & E. GAS MAIN
DISTRICT FACILITY STATIONING
22+00 N35°53'04"E 21+00 TC LINE 20+00 19+00 18+00 17+00 16+00 15+00 14+00
305+00 306+00 307+00 308+00 309+00 310+00 311+00 312+00
N41°17'50"W
THOMPSON CREEK
EXIST LOW FLOW CHANNEL
23+00 24+00 25+00 26+00
FLOW
P LINE
N43°17'26"W
CONFORM TO EXIST LEVEE
N63°42'04" 63'
"P" LINE STA 79+89.12 ⊀ PT 17
CONFORM TO EXIST. TOP OF LEVEE
2:1
13'
PROPOSED LEVEE
PROPOSED V-DITCH TO DRAIN
TC STA 310+98.02 B.C.
TC STA 313+00
TC CURVE DATA
TC 1 Δ=18°57'16" R=1200' L=396.98' T=200.32'
TCR STA 300+00 MATCH LINE SHEET 4
TCR CURVE DATA
TCR 5 Δ=67°58'02" R=102' L=120.94' T=68.71'
TCR 6 Δ=50°08'15" R=58' L=48.35' T=24.77'
TCR STA 305+59.81 P.O.T. 77.0' LEFT TC STA 305+59.81 P.O.T.
TCR STA 305+51.18 E.C.
TCR STA 305+04.83 P.R.C.
TCR STA 303+83.89 B.C.
TCR LINE
N39°41'22"W 786.46'
301+00 302+00 303+00 304+00 305+00
R/W
WARNING: OVERHEAD POWER LINES IN THIS AREA
P.G. & E. GAS MAINS (3)
JP
P.G. & E. TRANSMISSION LINES
EXIST. R/W


1% DESIGN WATER SURFACE
EXIST. ROCK LINING
CONFORM TO EXISTING SLOPE
3' MIN
3:1
PROPOSED LEVEE
15'
PROPOSED MAINTENANCE ROAD SEE NOTE 4
2:1
0.5'-1'
PROPOSED V-DITCH
EXISTING GROUND
TYPICAL SECTION-TC STA 305+60 TO TC STA 311+00
SCALE: 1"=10'
TCR LINE
TC LINE
TCR STA 300+00 MATCH LINE SHEET 4
TCR EXIST. PROFILE GRADE TOP OF LEVEE
1% DESIGN WATER SURFACE SEE NOTE 2
10% DESIGN WATER SURFACE SEE NOTE 2
TC STA 305+61 BEGIN PROPOSED EAST LEVEE
EL. 153.0
EXIST PROFILE GRADE-TOP OF WEST LEVEE
PROFILE GRADE-TOP OF PROPOSED EAST LEVEE
S=0.0089
FLOW
EXIST. PROFILE GRADE TOP OF EAST LEVEE
TC STA 312+00 EL. 147.3' GB EAST LEVEE BEGIN PROPOSED WEST LEVEE
PROFILE GRADE-PROPOSED LEVEES
EL. 146.9'
S=.0039
TC STA 313+00 MATCH LINE SHEET 6
BOTTOM OF EXIST. CHANNEL
EXIST P.G. & E. GAS MAINS
TCR STA 305+59.81 EQUATION STATION = TC STA. 305+59.81
EXIST PROFILE GRADE TOP OF ROCK LINING & LOW FLOW CHANNEL
ELEVATIONS IN FEET
155
150
145
140
135
STATION
300+00 301+00 302+00 303+00 304+00 305+00 306+00 307+00 308+00 309+00 310+00 311+00 312+00 313+00
TC STATION

PROFILE
H: 1" = 50'
V: 1" = 5'

DESCRIPTION	DATE	APPR.
REDUCED PLAN USE SCALE BELOW 0 1 2 3 3 INCHES ON ORIGINAL PLAN		

REFERENCE INFORMATION AND NOTES:

1. SEE SHEET 7 FOR TCL LINE PROFILE.
2. 1% FLOW RATE IS 3,600 CFS AND 10% FLOW RATE IS 2,100 CFS.
3. CHANNEL ROUGHNESS: TC STA 305+00 TO STA 313+00 IS 0.045, TCR STA 300+60 TO STA 305+00 IS 0.060 IN CHANNEL, AND 0.040 IN FLOODPLAIN.
4. PLACE 6" OF AGGREGATE ON PROPOSED AND EXIST. 15' MAINT. ROADS AND RAMPS.
5. CROSS SECTION LOOKING DOWNSTREAM.

PHOTOGRAPHY BY: AIR FLIGHT SERVICE
DATE: 12/87
RECTIFICATION BY:

DATE 1/88
DESIGN MK
DRAWN CAM
CHECKED

Santa Clara Valley Water District

ENGINEERING CERTIFICATION
PROJECT ENGINEER R.C.E. NO. 40842
Randy Talley
DIVISION ENGINEER R.C.E. NO. 25093

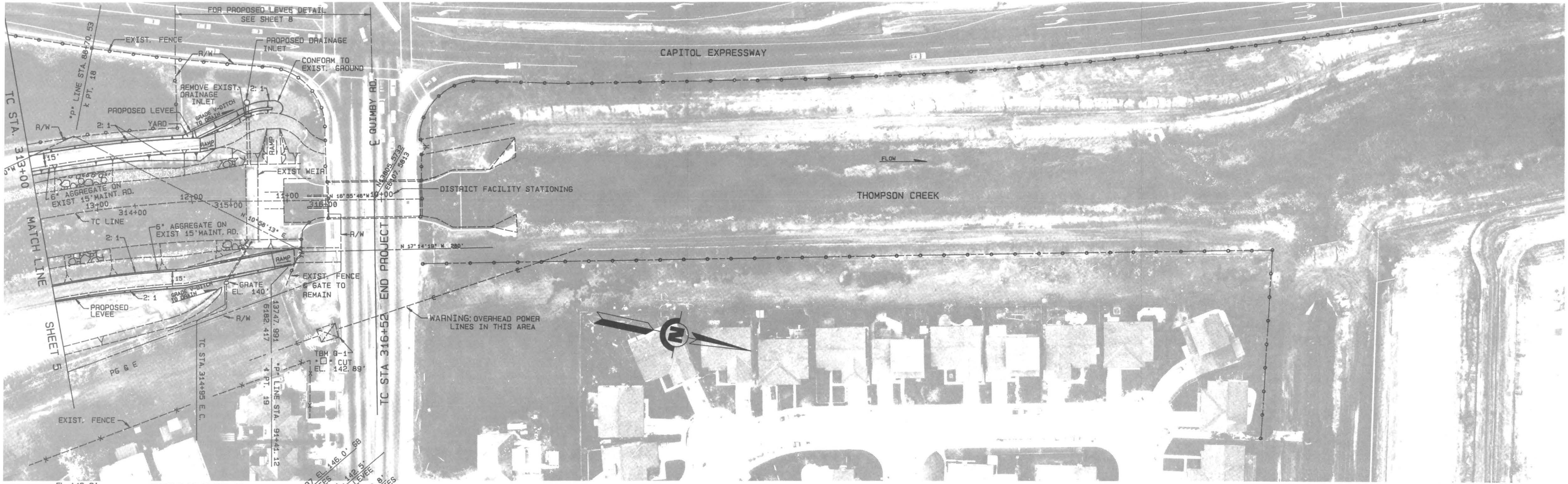
ENGINEERING APPROVAL
HEAD, PROJECT DEVELOPMENT BRANCH R.C.E. NO. 20474

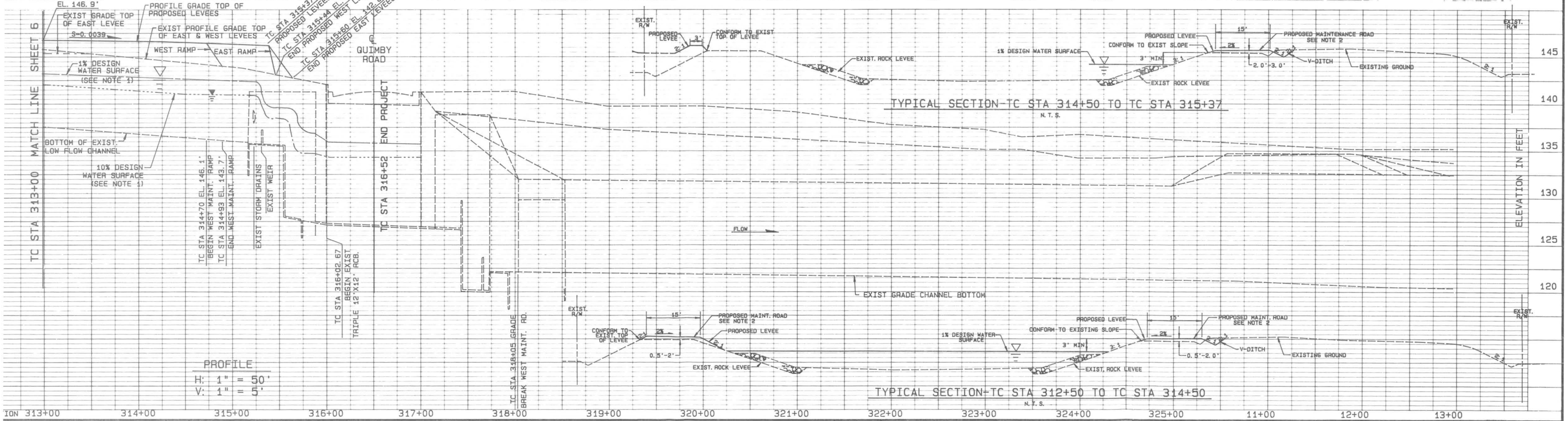
THOMPSON CREEK

PLAN & PROFILE

SCALE
1' = 50"

SHEET
5


FOR PROPOSED LEVEE DETAIL SEE SHEET 8
EXIST. FENCE
R/W
PROPOSED DRAINAGE INLET
CONFORM TO EXIST. GROUND
REMOVE EXIST. DRAINAGE INLET
"P" LINE STA. 88+70.53 & PT. 18
PROPOSED LEVEE
YARD
2:1
GRADE V-DITCH TO DRAIN
RAMP
TC STA. 313+00 MATCH LINE SHEET 5
15'
6" AGGREGATE ON EXIST 15' MAINT. RD.
13+00
12+00
314+00
315+00
TC LINE
EXIST WEIR
11+00
316+00
10+00
N 18°55'46"W
N 10°58'13" E
DISTRICT FACILITY STATIONING
N 17°14'18" W 280'
QUIMBY RD.
CAPITOL EXPRESSWAY
FLOW
THOMPSON CREEK
GRATE EL. 140'
EXIST. FENCE & GATE TO REMAIN
PROPOSED LEVEE
TC STA. 314+95 E.C.
13747.991
6182.417
"P" LINE STA. 94+41.12 & PT. 19
TBM Q-1 "□" CUT EL. 142.89'
TC STA 316+52 END PROJECT
WARNING: OVERHEAD POWER LINES IN THIS AREA
PG & E
EXIST. FENCE
N


EL. 146.9'
EXIST GRADE TOP OF EAST LEVEE
PROFILE GRADE TOP OF PROPOSED LEVEES
S=0.0039
EXIST PROFILE GRADE TOP OF EAST & WEST LEVEES
WEST RAMP
EAST RAMP
TC STA 315+37 EL. 146.0' GB PROPOSED LEVEES
TC STA 315+44 EL. 142.5' END PROPOSED WEST LEVEE
TC STA 315+60 EL. 142.8' END PROPOSED EAST LEVEES
QUIMBY ROAD
1% DESIGN WATER SURFACE (SEE NOTE 1)
BOTTOM OF EXIST. LOW FLOW CHANNEL
10% DESIGN WATER SURFACE (SEE NOTE 1)
TC STA 313+00 MATCH LINE SHEET 6
TC STA 314+70 EL. 146.1' BEGIN WEST MAINT. RAMP
TC STA 314+93 EL. 143.7' END WEST MAINT. RAMP
EXIST STORM DRAINS
EXIST WEIR
TC STA 316+02.67 BEGIN EXIST. TRIPLE 12'X12' RCB.
TC STA 316+52 END PROJECT
TC STA 318+05 GRADE BREAK WEST MAINT. RD.
FLOW
EXIST GRADE CHANNEL BOTTOM
PROFILE
H: 1" = 50'
V: 1" = 5'
EXIST. R/W
PROPOSED LEVEE
3'
CONFORM TO EXIST TOP OF LEVEE
2:1
EXIST. ROCK LEVEE
1% DESIGN WATER SURFACE
CONFORM TO EXIST SLOPE
3' MIN
3:1
15'
2%
PROPOSED MAINTENANCE ROAD SEE NOTE 2
2.0'-3.0'
V-DITCH
EXISTING GROUND
TYPICAL SECTION-TC STA 314+50 TO TC STA 315+37
N.T.S.
CONFORM TO EXIST. TOP OF LEVEE
PROPOSED MAINT. ROAD SEE NOTE 2
0.5'-2'
CONFORM TO EXISTING SLOPE
0.5'-2.0'
TYPICAL SECTION-TC STA 312+50 TO TC STA 314+50
145
140
135
130
125
120
ELEVATION IN FEET
ION 313+00
314+00
315+00
316+00
317+00
318+00
319+00
320+00
321+00
322+00
323+00
324+00
325+00
11+00
12+00
13+00

DESCRIPTION	DATE	APPR.
REDUCED PLAN USE SCALE BELOW 0 1 2 3 3 INCHES ON ORIGINAL PLAN		

REFERENCE INFORMATION AND NOTES:

1. 1% FLOW RATE IS 3,600 CFS AND 10% FLOW RATE IS 2,100 CFS.
2. PLACE 6" OF AGGREGATE ON PROPOSED AND EXIST. 15' MAINT. ROADS AND RAMPS.
3. CROSS SECTION LOOKING DOWNSTREAM.

PHOTOGRAPHY BY: AIR FLIGHT SERVICE DATE: 12/87 RECTIFICATION BY:

DATE 3/3/88
DESIGN MK
DRAWN CAM
CHECKED NO

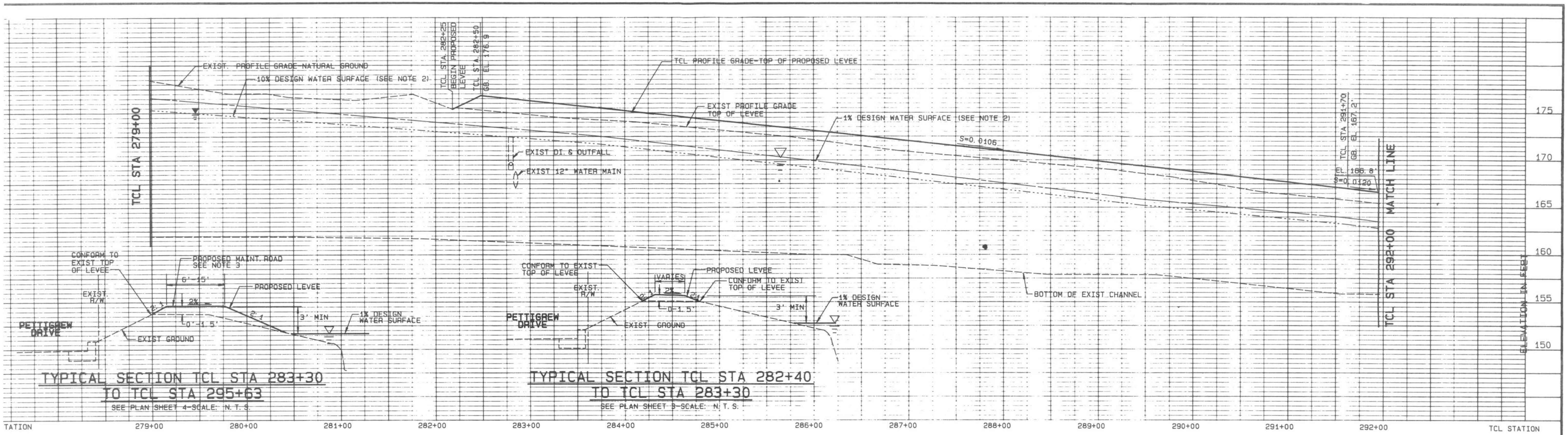
Santa Clara Valley Water District

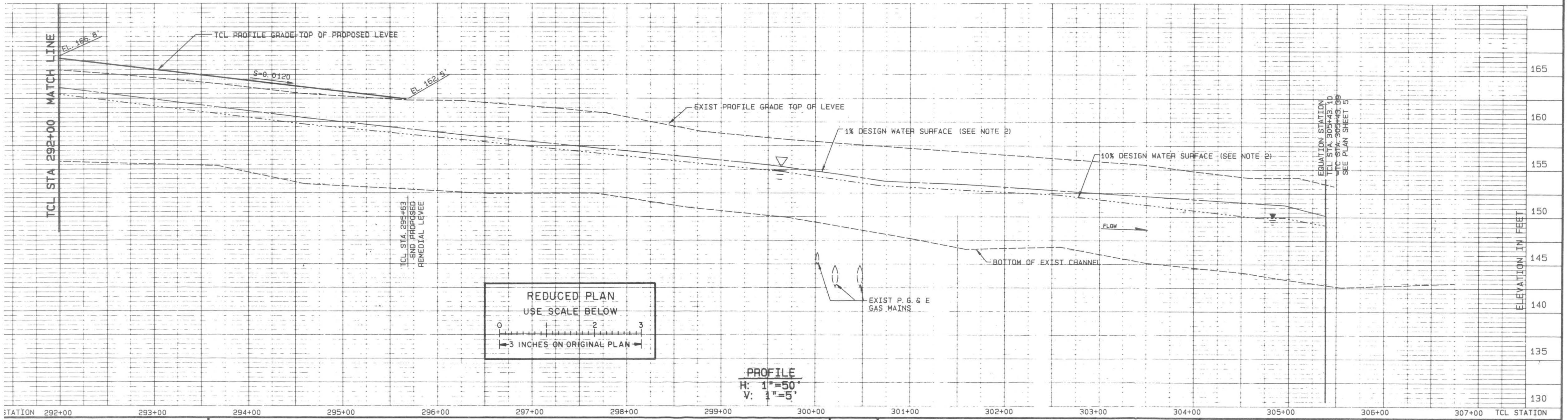
ENGINEERING CERTIFICATION
Mann Klein
PROJECT ENGINEER R.C.E. NO. 40842
Randy Talley
DIVISION ENGINEER R.C.E. NO. 25093

ENGINEERING APPROVAL
HEAD, PROJECT DEVELOPMENT BRANCH R.C.E. NO. 20474

THOMPSON CREEK
PLAN & PROFILE

SCALE 1' = 50"
SHEET 6


EXIST. PROFILE GRADE NATURAL GROUND
10% DESIGN WATER SURFACE (SEE NOTE 2)
TCL STA 282+25 BEGIN PROPOSED LEVEE
TCL STA 282+50 GB. EL 176.9
TCL PROFILE GRADE-TOP OF PROPOSED LEVEE
EXIST PROFILE GRADE TOP OF LEVEE
1% DESIGN WATER SURFACE (SEE NOTE 2)
S=0.0106
TCL STA 291+70 GB. EL 167.2'
EL 166.8'
S=0.0120
TCL STA 279+00
EXIST DI & OUTFALL
EXIST 12" WATER MAIN
TCL STA 292+00 MATCH LINE
BOTTOM OF EXIST CHANNEL
CONFORM TO EXIST TOP OF LEVEE
PROPOSED MAINT. ROAD SEE NOTE 3
6'-15'
PROPOSED LEVEE
EXIST. R/W
2:1
2%
2:1
0'-1.5'
3' MIN
1% DESIGN WATER SURFACE
PETTIGREW DRIVE
EXIST GROUND
TYPICAL SECTION TCL STA 283+30 TO TCL STA 295+63
SEE PLAN SHEET 4-SCALE: N.T.S.
CONFORM TO EXIST TOP OF LEVEE
VARIES
PROPOSED LEVEE
CONFORM TO EXIST TOP OF LEVEE
EXIST. R/W
2:1
2%
2:1
0'-1.5'
3' MIN
1% DESIGN WATER SURFACE
PETTIGREW DRIVE
EXIST. GROUND
TYPICAL SECTION TCL STA 282+40 TO TCL STA 283+30
SEE PLAN SHEET 3-SCALE: N.T.S.
175
170
165
160
155
150
ELEVATION IN FEET
TATION
279+00
280+00
281+00
282+00
283+00
284+00
285+00
286+00
287+00
288+00
289+00
290+00
291+00
292+00
TCL STATION


TCL STA 292+00 MATCH LINE
EL 166.8'
TCL PROFILE GRADE-TOP OF PROPOSED LEVEE
S=0.0120
EL 162.5'
EXIST PROFILE GRADE TOP OF LEVEE
1% DESIGN WATER SURFACE (SEE NOTE 2)
10% DESIGN WATER SURFACE (SEE NOTE 2)
EQUATION STATION TCL STA 305+43.10 JTC STA 305+43.99 SEE PLAN SHEET 5
TCL STA 295+63 -END PROPOSED REMEDIAL LEVEE
FLOW
BOTTOM OF EXIST CHANNEL
EXIST P.G.& E GAS MAINS
REDUCED PLAN
USE SCALE BELOW
0
1
2
3
3 INCHES ON ORIGINAL PLAN
PROFILE
H: 1"=50'
V: 1"=5'
165
160
155
150
145
140
135
130
ELEVATION IN FEET
STATION 292+00
293+00
294+00
295+00
296+00
297+00
298+00
299+00
300+00
301+00
302+00
303+00
304+00
305+00
306+00
307+00
TCL STATION

REFER TO TRACING FOR LATEST REVISION

DESCRIPTION	SUB.	APPR

REFERENCE INFORMATION AND NOTES

1. FOR TCL PLAN SEE SHEETS 3, 4, & 5.
2. 1% FLOW RATE IS 3,600 CFS AND 10% FLOW RATE IS 2,100 CFS; CHANNEL ROUGHNESS=0.050 AND FLOODPLAIN ROUGHNESS=0.040.
3. PLACE 6" OF AGGREGATE ON PROPOSED AND EXIST. 15' MAINT. ROADS.
4. CROSS SECTIONS LOOKING DOWNSTREAM.

DATE 3/3/88
DESIGN MK
DRAWN CAM
CHECKED

Santa Clara Valley Water District

ENGINEERING CERTIFICATION
PROJECT ENGINEER R.C.E. NO. 40842
Randy Talley
DIVISION ENGINEER R.C.E. NO. 25093

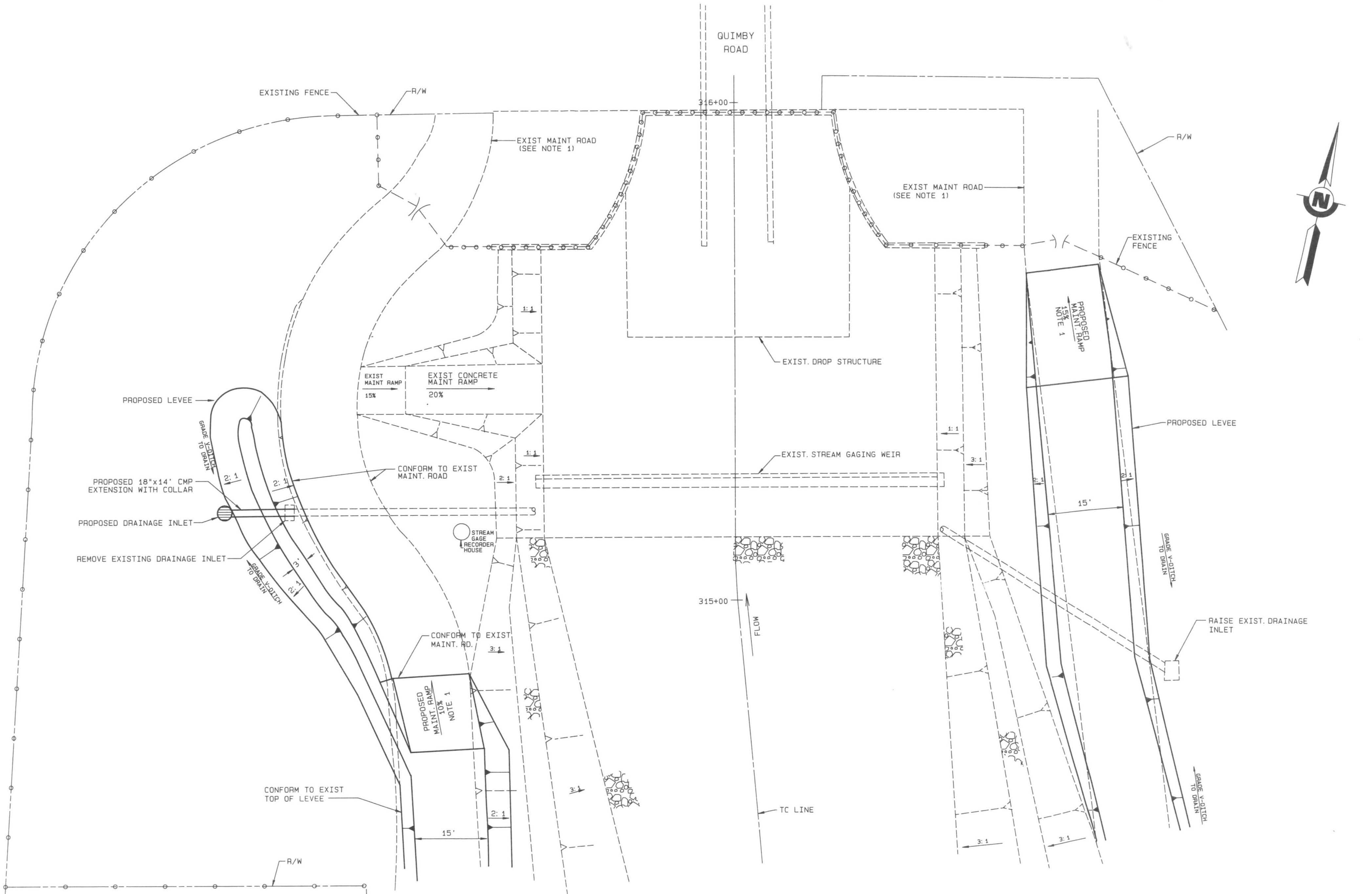
ENGINEERING APPROVAL
HEAD, PROJECT DEVELOPMENT BRANCH R.C.E. NO 20474

THOMPSON CREEK

PROFILE-TCL LINE

SCALE AS SHOWN

SHEET 7


QUIMBY ROAD
EXISTING FENCE
R/W
316+00
EXIST MAINT ROAD (SEE NOTE 1)
EXIST MAINT ROAD (SEE NOTE 1)
R/W
EXISTING FENCE
PROPOSED MAINT. RAMP 15% NOTE 1
EXIST. DROP STRUCTURE
EXIST MAINT RAMP 15%
EXIST CONCRETE MAINT RAMP 20%
1:1
PROPOSED LEVEE
GRADE V-DITCH TO DRAIN
PROPOSED 18"x14' CMP EXTENSION WITH COLLAR
PROPOSED DRAINAGE INLET
REMOVE EXISTING DRAINAGE INLET
2:1
3'
CONFORM TO EXIST MAINT. ROAD
STREAM GAGE RECORDER HOUSE
EXIST. STREAM GAGING WEIR
PROPOSED LEVEE
3:1
15'
GRADE V-DITCH TO DRAIN
315+00
FLOW
RAISE EXIST. DRAINAGE INLET
CONFORM TO EXIST MAINT. RD.
PROPOSED MAINT. RAMP 10% NOTE 1
CONFORM TO EXIST TOP OF LEVEE
15'
2:1
3:1
TC LINE
GRADE V-DITCH TO DRAIN
R/W
N

PLAN- DROP STRUCTURE UPSTREAM

DESCRIPTION	DATE	APPR

REFERENCE INFORMATION AND NOTES

1. PLACE 6" OF AGGREGATE ON PROPOSED & EXIST. 15' MAINT. ROAD & RAMPS.

REDUCED PLAN
USE SCALE BELOW
0 1 2 3
3 INCHES ON ORIGINAL PLAN

DATE 3/88
DESIGN KLEMENCIC
DRAWN TUCKER
CHECKED KLEMENCIC

Santa Clara Valley Water District

ENGINEERING CERTIFICATION
PROJECT ENGINEER R. C. E. NO. 40842
Randy Talley
DIVISION ENGINEER R. C. E. NO. 25093

ENGINEERING APPROVAL
HEAD, PROJECT DEVELOPMENT BRANCH R. C. E. NO. 20474

THOMPSON CREEK
QUIMBY ROAD DROP STRUCTURE UPSTREAM
DETAIL

SCALE AS SHOWN
SHEET 8